(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
2 November 2000 (02.11.2000)

PCT

(10) International Publication Number
WO 00/65772 A3

(51) International Patent Classification[7]: H04L 25/14, 1/00, 25/03, 7/02

(21) International Application Number: PCT/US00/11123

(22) International Filing Date: 24 April 2000 (24.04.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/130,616	22 April 1999 (22.04.1999)	US
09/390,856	3 September 1999 (03.09.1999)	US
09/437,721	9 November 1999 (09.11.1999)	US

(71) Applicant *(for all designated States except US)*: BROADCOM CORPORATION [US/US]; 16215 Alton Parkway, Irvine, CA 92618 (US).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: AGAZZI, Oscar E. [AR/US]; 16215 Alton Parkway, Irvine, CA 92618 (US).

(74) Agent: HOANG, Phuong-Quan; Christie, Parker & Hale, LLP, P.O. Box 7068, Pasadena, CA 91109-7068 (US).

(81) Designated States *(national)*: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

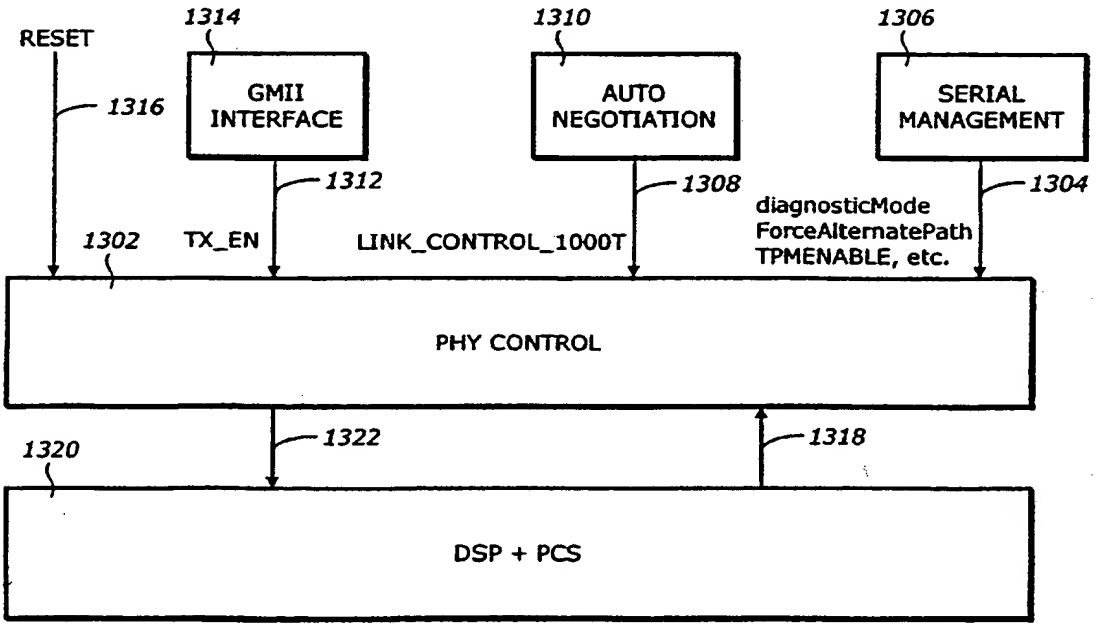
(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

(88) Date of publication of the international search report:
3 January 2002

[Continued on next page]

(54) Title: PHY CONTROL MODULE FOR A MULTI-PAIR GIGABIT TRANSCEIVER



(57) Abstract: A method for controlling operation of a multi-pair gigabit transceiver. The multi-pair gigabit transceiver comprises a Physical Layer Control module (PHY Control), a Physical Coding Sublayer module (PCS) and a Digital Signal Processing module (DSP). The PHY Control receives user-defined inputs from the Serial Management module and status signals and diagnostics signals from the DSP and the PCS and generates control signals, responsive to the user-defined inputs, the status signals and diagnostics signals, to the DSP and the PCS.

WO 00/65772 A3

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

Internatio Application No
PCT/US 00/11123

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04L25/14 H04L1/00 H04L25/03 H04L7/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, INSPEC, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99 07077 A (STANFORD SYNCOM INC) 11 February 1999 (1999-02-11) page 17, paragraph 2 page 61, paragraph 1 -page 63, paragraph 3 page 67, paragraphs 2,3 page 104, paragraph 2 -page 109, paragraph 3 page 116, paragraph 3 -page 117, paragraph 2 figures 1I,3,1D,10C,34 ---	1-10,12, 13,15-22
X	WO 98 09400 A (OELCER SEDAT ;CHERUBINI GIOVANNI (CH); UNGERBOECK GOTTFRIED (CH);) 5 March 1998 (1998-03-05) abstract page 7, line 23 -page 8, line 8 page 14, line 8 - line 16 --- -/--	9,10,12, 13

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
18 August 2000	05/09/2000

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Martínez Martínez, V

3

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

Internatk Application No
PCT/US 00/11123

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
X	AGAZZI O E ET AL: "TWO-PHASE DECIMATION AND JITTER COMPENSATION IN FULL-DUPLEX DATA TRANSCEIVERS" PROCEEDINGS OF THE INTERNATIONAL SYMPOSIUM ON CIRCUITS AND SYSTEMS. (ISCAS),US,NEW YORK, IEEE, vol. CONF. 25, 10 May 1992 (1992-05-10), pages 1717-1720, XP000338277 ISBN: 0-7803-0593-0 * I. Introduction * * II.Full-Duplex Transceiver Architecture. * ---	9-14
A	"Local and metropolitan area networks, Specific Requirements, Part 3: Carrier sense multiple access with coillision detection (CSMA/CD) access method and physical layer specifications." 1998 , LAN MAN STANDARDS COMMITTEE OF THE IEEE COMPUTER SOCIETY , USA XP002145257 * 34.1 Overview * * 34.1.1 Reconciliation Sublayer (RS) and Gigabit Medium Independent Interface (GMII). * * Clauses 36.1 to 36.2.2 * * 36.2.5.2.7 Auto-Negotiaiton Process * * 36.3.1. Service Interface of PMA sublayer. * * 36.3.7. Loopback mode * * 36.3.8. Test functions. * figures 34-1,36-1 ---	1-3, 15-17
A	HATAMIAN ET AL.: "Design Considerations for Gigabit Ethernet 1000Base-T Twisted Pair Transceivers." CUSTOM INTEGRATED CIRCUITS CONFERENCE, 1998., 11 - 14 May 1998, pages 335-342, XP002145256 the whole document -----	6-8, 20-22

3

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/US 00/11123

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9907077 A	11-02-1999	AU 8684098 A	22-02-1999
		EP 1021884 A	26-07-2000
WO 9809400 A	05-03-1998	NONE	

THIS PAGE BLANK (USPTO)

THIS PAGE BLANK (USPTO)